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 INTERNATIONAL COLLEGE PENANG (507232-U)
 LAUREATE INTERNATIONAL UNIVERSITIES

**FINAL Examination Paper
 (COVER PAGE)**
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Session : AUGUST 2012

Programme : DIPLOMA IN INFORMATION TECHNOLOGY

Course : CSC2118: PRINCIPLES IN INTERNET PROGRAMMING

Date of Examination : 8 December 2012

Time : 11a.m. – 1p.m. Reading Time : Nil

Duration : 2 Hours

Special Instructions :

This paper consists of **SIX (6)** questions. Answer any **FOUR (4)** questions in the answer booklet provided. All questions carry equal marks.

Materials permitted :

Nil

Materials provided :

Examiner(s) : Chern Huey Rong

Moderator : Annida Said

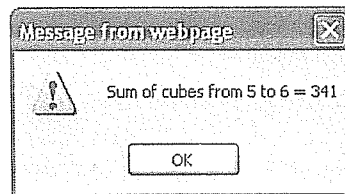
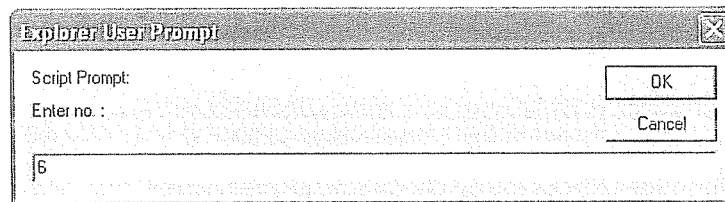
This paper consists of 9 printed pages, including the cover page.

INTI INTERNATIONAL COLLEGE PENANG
 DIPLOMA IN INFORMATION TECHNOLOGY
 CSC2118: PRINCIPLES IN INTERNET PROGRAMMING
 FINAL EXAMINATION: AUGUST 2012 SESSION

Instructions: This paper consists of **SIX (6)** questions. Answer any **FOUR (4)** questions in the answer booklet provided. All questions carry equal marks.

Question 1

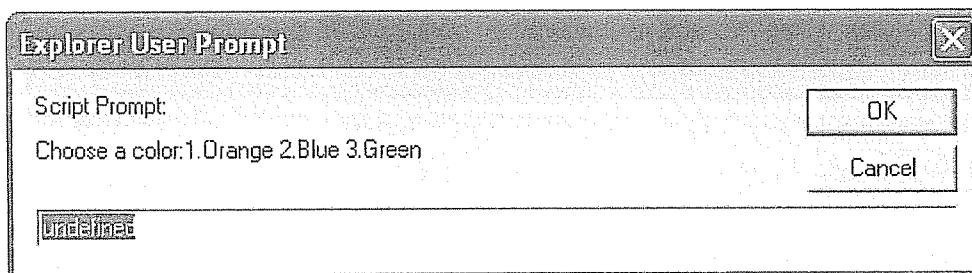
- (a) Write a Javascript program that asks the user to type an integer N and computes the sum of the cubes from 5^3 to N^3 .



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(6 marks)

- (b) Write Javascript code using Switch statement to request input from user as shown in dialog box below. Determine and display the output in dialog box as below.
- (i) User chooses 1, message “Just like the sun!” is shown.
 - (ii) User chooses 2, message “Just like the sea!” is shown.
 - (iii) User chooses 3, message “Just like the grass!” is shown.
 - (iv) User chooses any other number from above, message “Please try again!” is shown.



(6 marks)

(c) Given javascript code below, identify errors in the script.

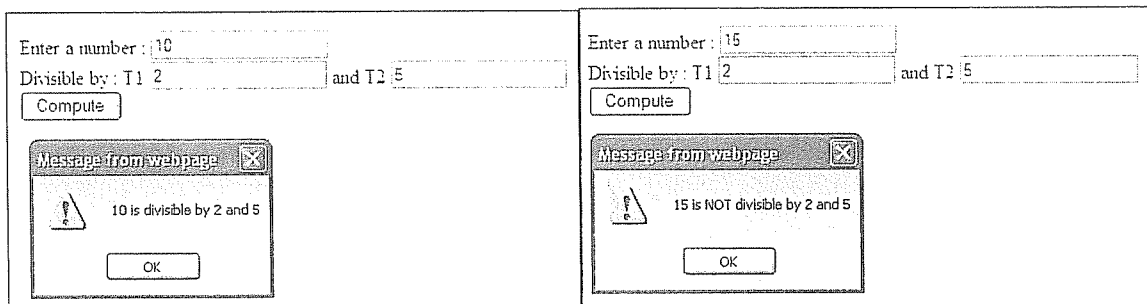
```

1  <script language="javascript">
2      var i, j, k;
3
4      write("<table>");
5
6      for(i=0; i<10, i++)
7      {
8          document.write("<tr>")
9          for(k=0; k<i; k++)
10         {
11             document.write( "<td>&nbsp;</td>");
12         }
13         for(j=10-i; j>0; j--)
14         [
15             document.write("<td>" + j + "</td>");
16         ]
17         document.write("</tr>");
18
19
20     document.write ("");
21 </script>

```

(7 marks)

(d) Write the Javascript code that can input a number and then print if it is divisible by T1 and T2, which are also user input.



(6 marks)

Question 2

(a) Trace and write all the outputs of code below:

```
<html>
<script language="javascript">
    var i, num;
    num = 2;
    i = 1;

    while (i<=10)
    {
        document.write(num + ", ");
        num = num + i;
        i = i + 1;
    }
</script>
<head></head>
<body></body>
</html>
```

(10 marks)

(b) Write a javascript to allow user to compute z based on Theorem Pythagoras

$z = \sqrt{x^2+y^2}$. Use Math.sqrt function to perform square root and the following page design as your guide.

The screenshot shows a web browser window with a search bar and a bookmarks menu. The address bar shows the file path C:\Temp\scripts\scripts\q4_ans.htm. The main content area contains a form with three input fields labeled 'x:', 'y:', and 'z:', and a 'Compute' button.

(8 marks)

c) Write a Javascript program that will input 10 integers and store them into an array. It will then prompt user to enter a number to search. If it is found, it will print "FOUND", else it will print "NOT FOUND".

(7 marks)

Question 3

- (a) Write Javascript code to get 50 students names and test scores. Calculate the average scores. Display the list of students and their scores who has their marks more than the average scores.

```
The average score is 80

The list of students above average marks are:
Jennifer ==> 90
Julia ==> 100
```

(8 marks)

- (b) Given a bag that contains 10 balls each labeled 0,1,2,3,4,5,6,7,8,9. If 3 balls were to be taken from the bag, write a program to display all the possible combinations of numbers and indicate total number of combinations.

(7 marks)

- (c) Write a PHP function that take a string and converts the first letter of all words to upper case and the rest to lowercase.

| |
|---|
| Original: one TWO three four After: One Two Three Four |
|---|

(5 marks)

- (d) Write a PHP script that use cookie to create page counter.

For first visit show output below:

| |
|---|
| Welcome to my Website! Click here for a tour! |
|---|

For subsequent visit show output below:

| |
|-------------------------|
| This is visit number 5. |
|-------------------------|

(5 marks)

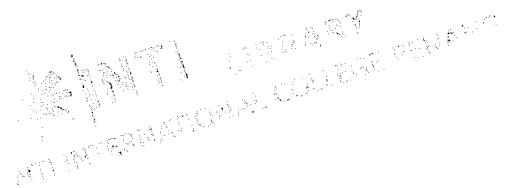
Question 4

- (a) Square root of a given integer, M can be determined by the following formula

$$x(n+1) = 1/2 * (x(n) + M/x(n))$$

when n approaching infinity, $x(n)$ is the square root of M . Write a javascript function to compute square root of M using the above formula (to the precision of 4 decimal).

(9 marks)

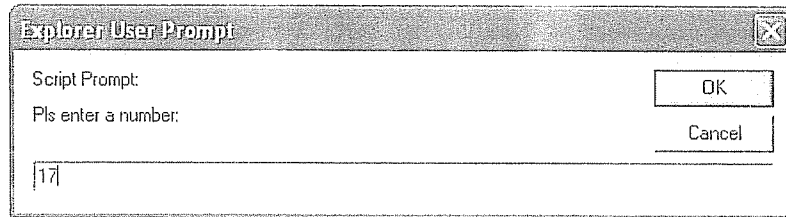

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- (b) Write the code using Javascript to get a number from the user. Use this as first number to generate the Hailstone sequence. Display the total count of numbers in this Hailstone sequence.

Hailstone sequence is a sequence of numbers that will eventually end in one by following a simple rule;

- i. if the number is even halve it by two,
- ii. if it's odd times it by three and add one

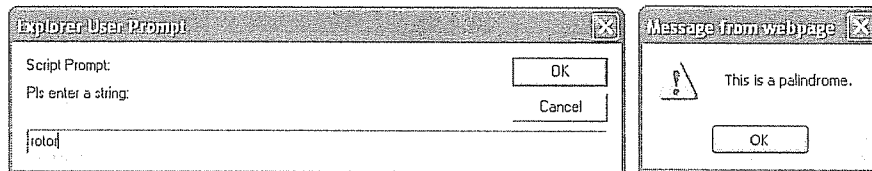
Example: if user inputs 5, the sequence would be 5 16 8 4 2 1.



17, 52, 26, 13, 40, 20, 10, 5, 16, 8, 4, 2, 1.
There are 13 numbers in the sequence.

(8 marks)

- (c) Write the code using Javascript to check if a string input is palindrome e.g.: rotavator, redivider, civic, rotator, rotor, kayak, racecar. Palindrome is word that can be read the same way in either direction.



(8 marks)

Question 5

(a) Trace and write all the outputs of code below:

```

<html>
<body>
<script language="javascript">
    i=0;
    for(i = 0; i < 10; i++) {
        if(i >= 5) {
            k = 2*(9-i)+1;
        }
        else {
            k = 2*i + 1;
        }

        var str = "";
        for(j = 0; j < 10 - k; j++) {
            str = str + '&nbsp;';
        }
        for(j = 0; j < k; j++) {
            str = str + '*';
        }
        for(j = 0; j < 10-k; j++) {
            str = str + '&nbsp;';
        }

        str = str + '<br>';
        document.write(str);
    }

</script>
</body>
</html>

```

(10 marks)

(b) Create a web page using Javascript to calculate the GCD(Greatest Common Divisor) and LCM (Least Common Multiple) of 2 numbers as shown below:

Calculate the Least Common Multiple and Greatest Common Divisor of two numbers.

| | |
|---|--|
| First Value | Second Value |
| <input style="width: 80%;" type="text" value="24"/> | <input style="width: 80%;" type="text" value="18"/> |
| <input type="button" value="Solve"/> | |
| Least Common Multiple <input style="width: 80%;" type="text" value="72"/> | Greatest Common Divisor <input style="width: 80%;" type="text" value="6"/> |

(9 marks)

- (c) Write a PHP function that can create a random string of x characters, using a defined string of possible characters.

(6 marks)

Question 6

- (a) A right triangle can have sides whose lengths are all integers. The set of three integer values for the lengths of the sides of a right triangle is called a Pythagorean triple. The lengths of the three sides must satisfy the relationship that the sum of the squares of two of the sides is equal to the square of the hypotenuse. Write an Javascript application to find all Pythagorean triples for side1, side2 and the hypotenuse, all no larger than 500.

(5 marks)

- (b) Explain the differences between terms below in PHP:

- i. split and explode
- ii. include and require

(8 marks)

- (c) A lot of sites will create a text "preview" on the front page of their site (say a news story) with a "more" link to get the full story. Write the PHP code that will create a teaser or preview text at a word break for text below:

| |
|---|
| <p>Original text: The quick brown fox jumped over the lazy dog Teaser text: The quick brown fox jumped over the ... <u>more</u></p> |
|---|

(6 marks)

- (d) Write PHP code to create a simple select element with month notations. Based on the current date the actual month is selected.

(6 marks)

--THE END--

csc2118(F)August 2012